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EXAMINER				
STOCK JR, GORDON J				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/528,949

**Applicant(s)**VULLERS, RUDOLF JOHAN  
MARIE**Examiner**

GORDON J. STOCK JR

**Art Unit**

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/23/05 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20050325, 20060123
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. The Preliminary Amendment received on March 23, 2005 has been entered into the record.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The information disclosure statements (IDS) submitted on March 23, 2005 and January 23, 2006 have been considered by the examiner.

***Drawings and Specification***

4. The drawings and specification are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: M and A of Fig. 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
6. The specification is objected to for the following: on page 8 line 13 '1' should read -1'- . Correction is required.

***Claim Objections***

7. **Claim 16** is objected to for the following: it lacks a period at the end of the claim. Correction is required.
8. **Claim 30** is objected to for the following: 'the at least one light-detection element' lacks proper antecedent basis. Correction is required.
9. **Claim 35** is objected to for the following: it appears that 'method according to claim 3' should read -method according to claim 31- since claim 3 is not a method. Examiner will be interpreting this claim as depending from **claim 31**. Correction is required.

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. **Claims 10-20** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claim 12**, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding **claim 20**, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The term "about" in **claims 10, 11, 13-19** is a relative term which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. 'About' renders the distances, widths, thicknesses, and volumes indefinite.

#### *Claim Rejections - 35 USC § 102*

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. **Claims 1-2, 8, 20, 22, 29, 31-34** are rejected under 35 U.S.C. 102(b) as being anticipated by **Alexander (3,588,255)**.

As for **claim 1**, Alexander discloses:

Optical element, provided with a receiving plane (10) comprising a receiving section (11) for receiving at least one light beam (2), wherein the receiving plane (10) is provided with at least one light-detection element (3) being arranged to detect whether at least part of said light beam is projected thereon. (Fig. 27: 314B with 308B1-308B8).

As for **claim 2**, Alexander discloses everything as above (see **claim 1**). In addition, he discloses that the at least one light-detection element (3) is arranged adjacent said receiving section (11). (Fig. 27: 314B with 308B1-308B8).

As for **claim 8**, Alexander discloses everything as above (see **claim 1**). In addition, he discloses the following: wherein said receiving plane (10) is provided with at least two spaced apart light-detection elements (3). (Fig. 27: 314B with 308B1-308B8).

As for **claim 20**, Alexander discloses everything as above (see **claim 1**). In addition, he discloses wherein the at least one light detection element comprises at least one electrically conductive material (Fig. 24: L1a for each detector).

As for **claim 22**, Alexander discloses everything as above (see **claim 1**). In addition, he discloses the following: wherein the optical element comprises electrical connections which are connected to the at least one light-detection element to connect said detection element to a measurement device (col. 12, lines 60-70).

As for **claim 29**, Alexander discloses everything as above (see **claim 1**). In addition, he discloses the following: wherein the optical element (1) comprises a mirror. (Fig. 27: 314B).

As for **claim 31**, Alexander discloses the following:

Method of aligning at least one light beam and an optical element according to claim 1, wherein the light beam (2) is projected onto said optical element (1), such that the optical element (1) receives the light beam (2) in said receiving plane (10), wherein the at least one light-detection element (3) is used to align the optical element (1) and the light beam (2) such, that the optical element substantially receives the light beam (2) in the receiving section (11) of the receiving plane (10). (abstract; Fig. 27).

As for **claims 32-33**, Alexander discloses everything above (see **claim 31**). In addition, he discloses that the light beam and the optical element are moved from a first relative position in which the light beam is detected by the at least one light-detecting element to a second relative position in which the light beam is not detected; and wherein the light beam and the optical element are moved to a third relative position in which the light beam is detected again and wherein a final relative position of the light beam and the optical element is determined using the detection results obtained for the first, second, and third relative positions (col. 12, lines 15-56).

As for **claim 34**, Alexander discloses that the light beam and the optical element are aligned on an optical axis of the laser (abstract; Fig. 27).

14. **Claims 1-2, 8, 9, and 22** are rejected under 35 U.S.C. 102(b) as being anticipated by **Lund et al. (4,320,462)**.

As for **claim 1**, Lund in a high speed laser pulse analyzer discloses the following: an optical element, a detector array (Fig. 1: 24) providing a receiving plane comprising a receiving section wherein the receiving plane is provided with at least one light-detection element being arranged to detect whether at least part of said light beam is projected thereon (col. 2, lines 24-30 and lines 60-67; Fig. 1: 24).

As for **claim 2**, Lund discloses everything as above (see **claim 1**). In addition, he discloses that at least one detection element is arranged adjacent said receiving section (Fig. 3: demonstrating several detector elements surrounding area that laser impinges).

As for **claim 8**, Lund discloses everything as above (see **claim 1**). In addition, he discloses at least two spaced apart light detection elements (Fig. 3: demonstrates several pairs of spaced apart detection elements surrounding the periphery of the laser beam spot impinging on the array).

As for **claim 9**, Lund discloses everything as above (see **claim 8**). In addition, he discloses the distance between the at least two detection elements is slightly larger than the diameter of said light beam, said diameter being measured in said receiving plane (Fig. 3: detection elements at the periphery of the laser beam spot on the array; col. 3, lines 58-60).

As for **claim 22**, Lund discloses everything as above (see **claim 1**). In addition, he discloses the optical element comprises electrical connections which are connected to the at least one light-detection element to connect said detection element to a measurement device (Fig. 3: demonstrates that all detector elements are connected to the microprocessor; col. 2, lines 34-41).

15. **Claims 1, 2, 4-8, 20, 22, 24, 37** are rejected under 35 U.S.C. 102(c) as being anticipated by **Kuwahara et al. (6,542,455)—cited by applicant**.



As for **claims 1, 2, 4-8, 12, 20, 22, 24, 37**, Kuwahara discloses the following:

Optical element, provided with a receiving plane (10) comprising a receiving section (11) for receiving at least one light beam (2), wherein the receiving plane (10) is provided with at least one light-detection element (3) being arranged to detect whether at least part of said light beam is projected thereon. (**claim 1**)(Fig 2a: 2; col. 3, lines 55-60); wherein the at least one detection element is arranged adjacent said receiving section (**claim 2**)(Fig. 2a: 10, 12, 2); wherein the at least one light-detection element substantially surrounds at least part of said light receiving section of the receiving plane (**claim 4**)(Fig. 2a: 10, 12, 2); wherein the at least one detection element is substantially ring-shaped (**claim 5**)(Fig. 2a: 10, 12); wherein said light receiving section, which is at least partially surrounded by said detection element, is only slightly larger than the cross section of said light beam viewed in said receiving plane (**claim 6**)(Fig. 2b: 10, 12, 2, 20); wherein said at least one detection element is arranged symmetrically with respect to said light receiving section (**claim 7**) (Fig. 2a: 10 and 12 are concentric to 2; Fig. 3: 10, 12 are symmetric with respect to a line parallel to 24 and 25 and intersecting 2); wherein said receiving plane is provided with at least two spaced apart light-detection elements (**claim 8**) (Fig. 3: left and right: 10 and 12; Fig. 5: demonstrating 4 quadrants); wherein the at least one light detection element comprises at least one electrically conductive material (**claim 20**) (Fig. 2b: 23); wherein the optical element comprises electrical connections which are connected to the at least one light-detection element to connect said detection element to a measurement device (**claim 22**)(Fig. 7: 23, 22 and demonstrates that position is measured for signals from the detector is used in position control; Fig. 5: col. 4, lines 64-67; col. 5, lines 1-35); wherein the at least one detection element extends at least partially within said receiving section (**claim 24**) (Fig. 2b: 10 extends on

both sides of 2); an optical device for recording comprising the optical element of **claim 1 (claim 37)** (see **claim 1** above with col. 3, lines 26-41).

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. **Claims 3, 21, 35, 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Alexander (3,588,255)** in view of **King (4,524,282)** and **Corbett et al. (4,325,145)**.

As for **claims 3, 21, 35, 36**, Alexander discloses everything as above (see **claim 1**). In addition, he discloses the detection element is connected to an electrical measurement device (col. 12, lines 60-70). He is silent concerning the at least one detection element comprising a material whose electric resistance changes when light of said light beam is projected thereon, wherein the at least one light-detection element comprises a thermocouple; thereby measuring resistance to detect light or whereby the light beam and optical element are moved so temperature falls. Nevertheless, King discloses that a change in resistance is used to determine the levelness relative to a laser beam (col. 1, lines 20-50) and Corbett teaches that laser energy may be detected with thermocouples via a measurement of temperature dependent change in resistance (col. 1, lines 5-20). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the detection element comprise a material that changes electric resistance when light is projected thereupon such as a thermocouple in order to detect the laser light shown upon it for aligning the laser beam to the optical element. And it would be

obvious to one of ordinary skill in the art at the time the invention was made to measure the resistance of a detection element in order to determine the presence of laser energy upon the photodetection element. In addition, it would be obvious to one of ordinary skill in the art at the time the invention was made to move the optical element and laser beam to a point where a temperature falls in order to determine the temperature dependent resistance of the photodetector that demonstrates when the laser is not projected upon the photodetector but upon the receiving section for optimal alignment.

18. **Claims 3 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuwahara et al. (6,542,455)**—cited by applicant in view of **King (4,524,282)** and **Corbett et al. (4,325,145)**.

As for **claims 3 and 23**, Kuwahara discloses everything as above (see **claim 1**). In addition, he demonstrates that different parts of each light detection element are arranged to be connected to an electrical measurement device (col. 4, lines 48-67; col. 5, lines 1-5). He does not explicitly state that the detection elements comprises material whose electrical resistance changes when light of said light beam is projected thereon. However, King discloses that a change in resistance is used to determine the levelness relative to a laser beam (col. 1, lines 20-50) and Corbett teaches that laser energy may be detected with thermocouples via a measurement of temperature dependent change in resistance (col. 1, lines 5-20). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the detection element comprise a material whose electrical resistance changes in order to detect the light projected on it.

19. **Claims 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lund et al. (4,320,462)**.

As for **claims 10 and 11**, Lund discloses everything as above (see claim 9). He does not explicitly state that the difference between the distance and the beam diameter is less than about 1 mm or 1 micron. However, he states that the detector array comprising a thousand detector elements (col. 2, lines 25-32). And Fig 3 demonstrates that at least twenty detection elements may be at the periphery of a laser beam.. And Fig. 3 demonstrates that the difference between the distance between two detection elements and the beam diameter may depend merely on the size of one detection element since a detection element is adjacent the one of the twenty detection elements and not comprising the detection elements that the laser beam spot impinges on. Therefore, the difference depends on the size of an individual detection element. It would have been an obvious matter of design choice to have the distance be less than 1 micron since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

20. **Claims 12 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuwahara et al. (6,542,455)—cited by applicant** in view of **LaBaw (3,678,283)**.

As for **claims 12 and 30**, Kuwahara discloses everything as above (see **claim 1**). In addition, he discloses at least one light detection element is provided on a substrate (Fig. 2a: 10, 12 on 8). As for the light detection element is provided using a thin layer deposition technique, Kuwahara is silent. However, LaBaw in a radiation sensitive optical tracker teaches that photodetectors are made via thin layer deposition (col. 2, lines 10-15). Therefore, it would be

obvious to one of ordinary skill in the art at the time the invention was made to use thin layer deposition in order to create the photodetection element on the substrate.

21. **Claims 13-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuwahara et al. (6,542,455)**—cited by applicant.

As for **claims 13-19**, Kuwahara discloses everything as above (see **claim 1**). As for the particular dimensions for the at least one detection element, Kuwahara does not specifically state a thickness of 100 nm or less or width smaller than 1 micron or a volume less than 10,000 cubic microns. He does mention that the thickness is related to the wavelength being used (col. 4, lines 1-10). Nevertheless, these dimensions relate to the size of the detection element. It would have been an obvious matter of design choice to have the thickness of nm or less, width smaller than 1 micron, or a volume less than 10,000 cubic microns since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

22. **Claims 25-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Alexander (3,588,255)**.

As for **claims 25-28**, Alexander discloses everything as above. He does not explicitly state that the optical element comprises a lens, grating, or optical filter; however, he does teach that optical filter may be used, that reflection means may be used, and that the target comprises an optical passage (col. 6, lines 5-6; col. 12, lines 59-75). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the optical element comprise a lens to provide an optical passage for the laser beam; to have the optical element comprise a reflective grating in order to reflect the laser beam back to the viewing telescopes; to

have the optical element comprise an optical filter in order to filter wavelengths that are not the laser of interest.

***Fax/Telephone Numbers***

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 8:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Gordon J Stock/

Primary Examiner, Art Unit 2877

July 6, 2008